

CLAIMS

What is claimed is:

1. A medical device for acquiring and analyzing a multi-lead electrocardiogram (ECG), the medical device comprising:
 - 5 an input terminal for connection to a patient to acquire multi-lead ECG signals from the patient;
 - an instrumentation amplifier connected to the input terminal to filter the ECG signals and combine the signals to generate a multi-lead ECG; and
 - 10 an analysis module including a processor and software for operating the processor to detect cyclic artifact in the multi-lead ECG and select a lead for analysis based on a lack of cyclic artifact in that lead.
2. A medical device as set forth in claim 1, the medical device further comprising:
 - 15 a display monitor connected to the analysis module, the display monitor capable of displaying the selected lead.
3. A medical device as set forth in claim 1, the medical device further comprising:
 - 20 a printer connected to the analysis module, the printer capable of printing the selected lead.
4. A medical device as set forth in claim 1, the medical device further comprising:
 - 25 an external storage device connected to the analysis module, the external storage device capable of storing the selected lead.
5. A medical device as set forth in claim 1, wherein the analysis module comprises a processor and software for operating the processor to detect cyclic artifact in the multi-lead ECG and to select the lead for analysis based on a lack of cyclic artifact in that lead.

6. A medical device as set forth in claim 1, wherein the multi-lead ECG comprises twelve leads.
7. A medical device as set forth in claim 1, wherein the multi-lead ECG comprises seven leads.
- 5 8. A medical device as set forth in claim 1, further comprising:
an analog-to-digital (A/D) converter connected between the instrumentation amplifier and the analysis module,
wherein the multi-lead ECG generated by the instrumentation amplifier is an analog multi-lead ECG, wherein the A/D converter converts the analog multi-lead
- 10 ECG to a digital multi-lead ECG and wherein the analysis module detects cyclic artifact in the digital multi-lead ECG.

9. A medical device for acquiring and analyzing a physiological waveform, the medical device comprising:

an input terminal for connection to a patient to acquire the physiological waveform from a patient;

5 an instrumentation amplifier connected to the input terminal to filter the physiological waveform; and

an analysis module including a processor and software for operating the processor to detect cyclic artifact in the physiological waveform.

10. A medical device as set forth in claim 9, the medical device further

10 comprising:

a display monitor connected to the analysis module, the display monitor being capable of displaying the physiological waveform.

11. A medical device as set forth in claim 9, the medical device further

comprising:

15 a printer connected to the analysis module, the printer being capable of printing the physiological waveform.

12. A medical device as set forth in claim 9, the medical device further

comprising:

an external storage device connected to the analysis, the external storage device being capable of storing the physiological waveform.

13. A medical device as set forth in claim 9, wherein the physiological waveform is a multi-lead ECG.

14. A medical device as set forth in claim 13, wherein the multi-lead ECG comprises twelve leads.

25 15. A medical device as set forth in claim 13, wherein the multi-lead ECG comprises five leads.

16. A medical device as set forth in claim 9, further comprising:
an analog-to-digital (A/D) converter connected between the instrumentation amplifier and the analysis module,
wherein the physiological waveform filtered by the instrumentation amplifier
5 is an analog physiological waveform, wherein the A/D converter converts the analog physiological waveform to a digital physiological waveform and wherein the means for detecting cyclic artifact detects cyclic artifact in the physiological waveform.

17. A medical device for acquiring and analyzing a physiological signal, the medical device comprising:
 - an input terminal for connection to a patient to acquire a physiological signal from the patient;
 - 5 an instrumentation amplifier connected to the input terminal to filter and amplify the physiological signal resulting in a physiological waveform; and means for detecting cyclic artifact in the physiological waveform.
18. A medical device as set forth in claim 17, the medical device further comprising:
 - 10 a display monitor connected to the means for detecting cyclic artifact, the display monitor being capable of displaying the physiological waveform.
19. A medical device as set forth in claim 17, the medical device further comprising:
 - 15 a printer connected to the means for detecting cyclic artifact, the printer being capable of printing the physiological waveform.
20. A medical device as set forth in claim 17, the medical device further comprising:
 - an external storage device connected to the means for detecting cyclic artifact, the external storage device being capable of storing the physiological waveform.
- 20 21. A medical device as set forth in claim 17, wherein the means for detecting cyclic artifact comprises an analysis module having a processor and software for detecting cyclic artifact in the physiological waveform.
22. A medical device as set forth in claim 17, wherein the physiological signal is a multi-lead ECG signal, and wherein the physiological waveform is a multi-lead ECG.
- 25 23. A medical device as set forth in claim 22, wherein the multi-lead ECG comprises twelve leads.

24. A medical device as set forth in claim 22, wherein the multi-lead ECG comprises five leads.
25. A medical device as set forth in claim 17, further comprising:
 - an analog-to-digital (A/D) converter connected between the instrumentation amplifier and the means for detecting cyclic artifact,
 - wherein the physiological waveform generated by the instrumentation amplifier is an analog physiological waveform, wherein the A/D converter converts the analog physiological waveform to a digital physiological waveform and wherein the means for detecting cyclic artifact detects cyclic artifact in the physiological waveform.